

AMENDMENTS TO CLAIMS

The following listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

1. (Currently amended) A process for the removal of carbon dioxide from a gas stream containing carbon dioxide by washing the gas stream in ~~a single~~ an absorption-stage-zone having from 5-80 contacting trays ~~stage~~ with an aqueous washing solution, at an aqueous washing solution to gas ratio of between 2 and 6 ~~form 1.0 to 10~~ (weight/weight), said aqueous washing solution containing between 20 ~~[[15]]~~ and 45 parts by weight water, between 20 ~~[[15]]~~ and 35 ~~[[40]]~~ parts by weight sulfolane and between 40 ~~[[30]]~~ and 55 ~~[[60]]~~ parts by weight of an amine selected from the group of amines consisting of MEA, DEA, TEA, DIPA and MDEA, wherein the parts by weights are based on the amounts of water, sulfolane and amine together being 100 parts by weight, and, further, wherein the aqueous washing solution contains piperazine in an amount ~~in the range~~ of from 0.7 mol/l to 0.9 mol/l, thereby obtaining an aqueous washing solution loaded with carbon dioxide, and a purified gas stream having a substantially reduced concentration of carbon dioxide, said carbon dioxide loaded aqueous washing solution being substantially free of insoluble carbamates.
2. (Previously presented) The process of claim 1, wherein the gas stream is natural gas or synthesis gas.
3. (Previously presented) The process of claim 2, wherein the gas stream includes an amount of carbon dioxide that is between 1 and 45 mol%, an amount of hydrogen sulphide that is between 0 and 25 mol%, and an amount of COS that is between 0 and 2 mol% (all % based on total gas stream).
4. (Previously presented) The process of claim 3, wherein the aqueous washing solution includes an amount of water that is between 20 and 45 parts by weight, an amount of sulfolane that is between 20 and 35 parts by weight, and an amount of the amine that is between 40 and 55 parts

by weight, wherein the parts by weights are based on the amounts of water, sulfolane and amine together being 100 parts by weight.

5-8 (Canceled).

9. (Previously presented) The process of claim 4, wherein the piperazine is present in the aqueous washing solution in an amount in the range of from 0.6 to 0.8 mol/l.

10-11 (Canceled).

12. (Previously presented) The process of claim 9 wherein the process is carried out at a temperature of at least 20°C.

13. (Previously presented) The process of claim 12, wherein the process also comprises a regeneration of the loaded solvent.

14. (Previously presented) The process of claim 13, wherein the process is carried out at a pressure between 25 and 90 bara.

15. (Currently amended) An absorbent liquid containing ~~absorbed carbon dioxide and further containing~~ between 20 [[15]] and 45 parts by weight water, between 20 [[15]] and 35 [[40]] parts by weight sulfolane and between 40 [[30]] and 55 [[60]] parts by weight of an amine selected from the group of amines consisting of MEA, DEA, TEA, DIPA and MDEA, wherein the parts by weights are based on the amounts of water, sulfolane and amine together being 100 parts by weight, and, further, wherein the aqueous washing solution contains piperazine in an amount of from 0.7 mol/l to 0.9 mol./l, and wherein said absorbent liquid after absorption of carbon dioxide is being substantially free of insoluble carbamates.

16-19 (Canceled)

20. (Currently amended) The absorbent liquid of claim 15 [[16]], wherein the piperazine is present in the aqueous washing solution in an amount in the range of from 0.6 to 0.8 mol/l.

21-22 (Canceled)

23. (Previously presented) The absorbent liquid of claim 20, wherein the amine is MDEA.

24. (Currently amended) The process of claim 1, wherein carbon dioxide is produced at an intermediate pressure of between 3 and 15 bara ~~the ratio of aqueous washing solution to gas is between 2 and 6.~~

25. (Previously presented) The process of claim 1, wherein the amine in the aqueous washing solution is DIPA.

26. (Previously presented) The absorbent liquid of claim 15, wherein the amine is DIPA.

27. (Currently amended) The process of claim 24 [[1]], wherein carbon dioxide is produced at an intermediate pressure of between 5 and 10 bara ~~the ratio of aqueous washing solution to gas is between 2 and 6.~~